

Claims

1. A wireless LAN comprising an access point, at least one communications device, and a controller, the access point including a data communicator for communicating data with the or each mobile communications device over downlink and uplink channels each of which uses a respective wireless technology, said at least one mobile communications device including a data communicator for communicating data over said channels and for using said wireless technologies, wherein a first of the channels is arranged to use a wireless technology operating at a first frequency bandwidth, and a second of the channels is arranged to use a different wireless technology operating at a second, non-overlapping frequency bandwidth, wherein the wireless technology arranged to be used for the downlink channel is arranged to operate at a higher data rate than the wireless technology arranged to be used for the uplink channel, and wherein the controller is arranged for controlling data communications over the downlink channel and the uplink channel to maximise the QoS of downlink data communication.
2. A wireless LAN as claimed in claim 1, wherein each of the wireless technologies is one of 802.11a, 802.11b, Hiperlan/2, Bluetooth or Home RF.
3. A wireless LAN as claimed in claim 1, wherein said at least one mobile communications device is arranged to transmit a service request signal on the uplink channel, and the controller is arranged to control the bandwidth on the downlink channel to a given mobile communications device in response to a service request signal received from that device.
4. A method of controlling data communications in a wireless LAN including an access point and at least one mobile communications device, the method comprising steps of:
 - a) communicating data from the access point to a given mobile communications device on a downlink channel using a first wireless technology;
 - b) communicating data from the given mobile communications device to the access point on an uplink channel using a second wireless technology; the first and second wireless technologies being different wireless technologies, operating at non-overlapping frequency

bandwidth, the first wireless technology operating at a faster data rate than the second wireless technology; and

c) controlling data communications over the downlink channel and the uplink channel to maximise the QoS of downlink data communication.

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5. A method as claimed in claim 4, wherein the data communicated from the given mobile communications device to the access point includes a service request.

6. A method as claimed in claim 5, further comprising controlling the bandwidth on the
10 downlink channel in response to a service request sent by the given mobile communications device.

7. A method as claimed in claim 4, wherein the data communicated from the given mobile communications device to the access point includes uplink control signals.

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8. A method as claimed in claim 4, further comprising controlling data communications so that any spare capacity on the uplink channel is used for downloading data from the access point to the given mobile communications device.

9. A method as claimed in claim 4, further comprising controlling data communications
20 so that each of the wireless technologies is used for both uploading and downloading data to and from the access point.

10. A wireless LAN comprising an access point, at least one communications device,
25 and a controller, the access point including a transceiver for data communication with said at least one mobile communications device over downlink and uplink channels each of which is arranged to use a respective wireless technology, said at least one mobile communications device including a respective transceiver for data communication over said channels and arranged to use said wireless technologies, wherein a first of the channels is arranged to use a
30 wireless technology operating at a first frequency bandwidth, and a second of the channels is arranged to use a different wireless technology arranged to operate at a second, non-overlapping frequency bandwidth, wherein the wireless technology used for the downlink channel is arranged to operate at a higher data rate than the wireless technology used for the

uplink channel, and wherein the controller is arranged to control data communications over the downlink channel and the uplink channel to maximise the QoS of downlink data communication.

11. A method of controlling data communications in a wireless LAN including an access point and at least one mobile communications device, the method comprising steps of:

a) communicating data from the access point to a given mobile communications device on a downlink channel using a first wireless technology;

b) communicating data from the given mobile communications device to the access point on an uplink channel using a second wireless technology; the first and second wireless technologies being different wireless technologies, operating at non-overlapping frequency bandwidth, the first wireless technology operating at a faster data rate than the second wireless technology; and

c) controlling data communications over the downlink channel and the uplink channel to maximise the QoS of downlink data communication,

wherein the data communicated from the given mobile communications device to the access point includes a service request signal, and controlling the bandwidth of the downlink channel in response to a service request signal sent by the given mobile communications device.

12. A wireless LAN comprising an access point, at least one communications device, and a controller, the access point including a transceiver for data communication with said at least one mobile communications device over downlink and uplink channels each of which uses a respective wireless technology, said at least one mobile communications device including a respective transceiver for data communication over said channels and arranged to use said wireless technologies, wherein a first of the channels uses a wireless technology is arranged to operate at a first frequency bandwidth, and a second of the channels is arranged to use a different wireless technology arranged to operate at a second, non-overlapping frequency bandwidth, wherein the wireless technology arranged to be used for the downlink channel is arranged to operate at a higher data rate than the wireless technology arranged to be used for the uplink channel, wherein the controller is arranged to control data communications over the downlink channel and the uplink channel to maximise the QoS of downlink data communication, and wherein said at least one mobile communications device

is arranged to transmit a service request signal on the uplink channel, and the controller is arranged to control the bandwidth on the downlink channel to a given mobile communications device in response to a service request signal received from that device.